ABSTRACT

A transmission diffraction grating body including a base material being substantially transparent with respect to wavelength λ1 and having a refractive index n0; another base material being substantially transparent with respect to wavelength λ1 and having a refractive index n1, which is formed on the base material having a refractive index n0; and a relief diffraction grating formed on the base material having a refractive index n1; wherein the refractive indexes n1 and n0 satisfy the relationship: $n1 > n0$. Thus, the base material having a refractive index n1 can be formed of a high refractive index material, and when the depth of grating of the diffraction grating is set so that the diffraction grating diffracts the light with wavelength λ1 and does not diffract the light with wavelength λ2, the depth of grating of the diffraction grating can be made to be shallow, thus preventing the loss of the amount of the light with wavelength λ1. Furthermore, since base materials each having a different refractive index are bonded to each other to form a diffraction grating body, it is possible to minimize the use amount of the relatively expensive material having a high refractive index. Furthermore, since the most of the diffraction grating body can be formed of a material having a low refractive index, it is possible to lower the height of the diffraction index body.